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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ken Shiozaki

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EXAMINER

BERTHEAUD, PETER JOHN

ART UNIT

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3746

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/826,988	Applicant(s) SHIOZAKI ET AL.	
	Examiner PETER J. BERTHEAUD	Art Unit 3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 September 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office action is in response to amendments filed 12/30/2009. It should be noted that claims 1 and 3 have been amended.

Claim Objections

2. Claims 1 and 3 objected to because of the following informalities: In lines 19-23 of both claims 1 and 3, the phrase, "an armature between the fixed and the free end, an electromagnet is supported by said rotating shaft body through the bearing on the oil reservoir chamber side of said sealing housing, and an electromagnet aligned with the armature for controlling the opening and closing of the oil circulating flow passage;" should be changed to, --an armature between the fixed and the free end, an electromagnet ~~is~~ supported by said rotating shaft body through the bearing on the oil reservoir chamber side of said ~~sealing~~ housing, and ~~an~~ the electromagnet being aligned with the armature for controlling the opening and closing of the oil circulating flow passage;--. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-5 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The amendments made to claims 1 and 3 both contain the new limitation "a torque transmission gap". However, later in these claims a "torque transmission clearance" is recited. It is unclear if these two recitations are the same

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element or not. Consistency in the claim terms is requested if they are indeed the same element. Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin 4,556,138 in view of Shiozaki 6,550,596 (Pub. 6/10/2002 US 2002/0003075), in further view of Watanabe 6,247,567, and still in further view of Creger 5,467,854.

Martin discloses a control method of an external control system fan clutch comprising: providing a rotating shaft 4,17, a drive disk 6 fixed to the rotating shaft body and a housing 2, 2' supported through a bearing on the rotating shaft, the housing having an interior, a partition plate 8 in the housing and partitioning the interior into an oil reservoir chamber 9 and a torque transmission chamber 7, said drive disk 6 being in the torque transmission chamber 7, a torque transmission gap being defined between the drive disk 6 and the housing at locations spaced outward from the rotating shaft (see gap between ends of drive disk 6 and the housing 2); an oil circulating flow passage 10 through the partition plate inwardly of the torque transmission gap and a valve member 11 comprising a spring material and having a magnetic property and being arranged within the oil reservoir chamber 9, the valve member having a fixed end

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at a radially inner position, a free end at a radially outer position, the free end being aligned for closing oil circulating flow passage 10 formed in the partition plate 8 between the torque transmission chamber 7 and the oil reservoir chamber 9; an armature (within the valve itself) between the fixed end and the free end, an electromagnet 20 is supported by said rotating shaft body through the bearing on the oil reservoir chamber 9 side of said sealing housing 2, 2', and an electromagnet aligned with the armature for controlling the opening and closing of the oil circulating flow passage 10, utilizing a spring characteristic of the spring material of the valve member 11 for biasing the valve member 11 against the partition plate 8 for keeping the oil circulating flow passage in a normally closed condition while keeping the valve member 11 substantially free of magnetic forces acting thereon (see col. 2, lines 31-33); detecting a temperature of cooling liquid of a radiator, and potentially other parameters (see col. 2, lines 61-68), for determining a desired rotational speed of the sealing housing 2, 2'; selectively operating the electromagnet 20 in response to detected signals indicating a need for an increased rotational speed of the housing for attracting armature of the valve member 11 and deflecting the valve member away from the partition plate 8 for opening the oil circulating flow passage 10 to permit a flow of oil through the oil circulating flow 10 passage and radially outwardly into the torque transmission clearance between the drive disk 6 and the housing 2, 2' to increase an effective contact area of the oil in the torque transmission clearance (see col. 3, lines 12-18); and selectively turning off the electromagnet 20 in response to detected signals indicative of a requirement for a slower rotational speed of the housing so that the valve member 11 is substantially free

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of magnetic forces and is biased into the normally closed condition by the spring material (see col. 3, lines 18-21) for controlling rotating torque transmission from a drive side to a driven side by increasing and decreasing an effective contact area of the oil in the torque transmission clearance. Martin further teaches magnetic materials 21 arranged between said electromagnet 20 and the valve member 11, and is constructed by assembling the magnetic material into the housing 2, 2' so as to transmit a magnetic flux of the electromagnet to the valve member through the magnetic material (see col. 3, lines 1-12). In addition, Martin teaches the claimed invention except for the magnetic material arranged between said electromagnet and the valve member being a ring shape. At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to have the magnetic material of Martin (21) made into the ring shape of a ring, because Applicant has not disclosed that this arrangement, provides an advantage, is used for a particular purpose, or solves a stated problem. It has been held that mere rearrangement of the essential working parts of a device involves only routine skill in the art. In re Kuhle, 526 F.2d 553, 188 USPQ 7 (CCPA 1975) (see MPEP 2144.04, VI. C. - Rearrangement of Parts). However, Martin does not teach the specific operating parameter limitations taught by Shiozaki, Watanabe, and Creger.

Shiozaki teaches a control method of an external control system fan clutch comprising: providing a rotating shaft 1, a drive disk 3 fixed to the rotating shaft body and a housing 2 supported through a bearing on the rotating shaft, the housing having an interior, a partition plate 4 in the housing and partitioning the interior into an oil

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reservoir chamber 5 and a torque transmission chamber 6, said drive disk 3 being in the torque transmission chamber 6, a torque transmission gap being defined between the drive disk 3 and the housing at locations spaced outward from the rotating shaft (see gap between ends of drive disk 3 and the housing 2); a dam 15 is arranged in one portion of an inner circumferential wall face of the housing opposed to an outer circumferential wall portion of the drive disk 3 for collecting and reservoiring oil at a rotating time, an oil circulating flow passage 7 through the partition plate 4 inwardly of the torque transmission gap and a valve member 9 comprising a spring material and having a magnetic property and being arranged within the oil reservoir chamber 5, the valve member 9 having a fixed end at a radially inner position, a free end at a radially outer position, the free end being aligned for closing oil circulating flow passage 7 formed in the partition plate 4 between the torque transmission chamber 6 and the oil reservoir chamber 5; an armature 9-2 between the fixed end and the free end, an electromagnet 11 is supported by said rotating shaft body through the bearing on the oil reservoir chamber 5 side of said housing, and an electromagnet 11 aligned with the armature for controlling the opening and closing of the oil circulating flow passage 7, utilizing a spring characteristic of the spring material of the valve member 9 for biasing the valve member against the partition plate 4 for keeping the oil circulating flow passage in a closed condition while magnetic forces act on the armature 9-2 of valve member valve member 9; selectively operating the electromagnet 11; controlling rotating torque transmission from a drive side to a driven side by increasing and decreasing an effective contact area of the oil in a torque transmission clearance portion

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formed by the drive side and the driven side (see col. 2, lines 16-27); wherein the opening and closing of said valve member could be controlled on the basis of a plurality of signals including a fan rotating speed (see col. 9, lines 63-37), an engine rotating speed, the pressure of a compressor of an air conditioner, and a turning-on or turning-off signal of the air conditioner (see col. 1, lines 6-11, and 47-53). Although not explicitly stated, it is obvious that the apparatus of Shiozaki is capable of performing a method wherein an upper limit rotating speed is set to an optimum fan rotating speed required from the engine side (see col. 10, lines 14-23); a fan rotating speed control signal is temporarily stopped on the basis of the differential speeds between an engine rotating speed, the fan rotating speed and said optimum fan rotating speed; the fan rotating speed control signal is temporarily stopped on the basis of an engine rotating acceleration or an accelerator (throttle) position acceleration; or a limit is given to a changing rate of the optimum fan rotating speed on the basis of the changing rate of said optimum fan rotating speed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin by detecting and using multiple parameters in order to determine a desired rotational speed as well as by implementing a method where an upper limit rotating speed is set to an optimum fan rotating speed, as taught by Shiozaki, thereby allowing the fan to cool the engine more efficiently and effectively.

Watanabe teaches a fan clutch assembly comprising a computer for controlling the rotational speed of the fan in response to, among others, the temperature of the

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engine cooling water (radiator), the vehicle speed, and the rotational speed of the fan (see col. 3, lines 25-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin by detecting and using multiple parameters in order to determine a desired rotational speed of the fan, as taught by Watanabe, thereby allowing the fan to cool the engine more efficiently and effectively.

Martin in view of Shiozaki and Watanabe discloses the invention as discussed above. However, Martin in view of Shiozaki and Watanabe does not teach the specific operating parameter limitations taught by Creger

Creger teaches a clutch assembly comprising a controller for controlling gear selection of a power train in response to, among others, a transmission oil temperature.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have modified the device of Martin in view of Shiozaki and Watanabe by detecting and using a transmission oil temperature as a determining parameter, as taught by Creger, in order to properly select a desired rotational speed of the fan, thereby allowing the fan to cool the engine more efficiently and effectively.

Response to Arguments

7. Applicant's arguments filed 12/30/2009 have been fully considered but they are not persuasive. Applicant seems to be arguing more than is claimed. All of the newly claimed structural limitations have been taught by the above rejection under 35 U.S.C. 103(a): Martin in view of Shiozaki, in further view of Watanabe, and still in further view

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of Creger. These amendments have failed to differentiate Applicant's invention from the prior art in terms of structure; thus the methods, as claimed, are capable of being performed by the prior art combination. There is no method step claimed involving the flow of oil or the magnetization of the valve that either Martin and/or Shiozaki do not teach. For clarity's sake, Examiner points out that Martin is primarily responsible for teaching the valve member and electromagnet assembly. Shiozaki, Watanabe, and Creger are responsible for showing that it is well known in the art to use the various control parameters claimed for adjusting the fan speed. The fact that Shiozaki's valve and magnet assembly works in a somewhat reverse manner is irrelevant because this portion of the assembly is taught Martin.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PETER J. BERTHEAUD whose telephone number is (571)272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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